

REMARKS

Applicants acknowledge their election by phone on November 18, 2009, of a species represented by a combination of flubendiamide (i.e., the compound of their formula II-1) and spromesifen (i.e., the compound of their formula I-b-1).

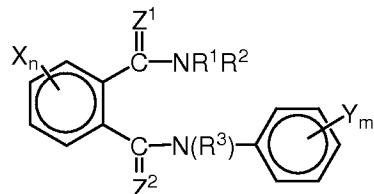
Applicants have canceled Claims 14-24 and have amended Claim 24 to place it in independent form and to correct minor informalities, including properly showing iodine as "I" in formula (II-1) instead of the German equivalent "J." Applicants note in this respect that their specification (especially at page 9, line 5) specifically teaches that substituent K of generic formula (II) can be iodine. Applicants respectfully submit that their claims remain fully supported by the specification.

Applicants note by way of comment that the Office Action at pages 7-8 states that the data in their specification are not commensurate in scope with their claims. Since the claims no longer encompass all of formulas (I) and (II) but are limited to combinations of only two specific compounds, Applicants submit that this comment is no longer relevant..

Rejection under 35 U.S.C. 103

Claims 14-26 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of WO 02/87334 (counterpart of published application US 2004/0077500 cited in the Office Action and the subsequently issued U.S. Patent 7,361,653, which Applicants will cite for purposes of discussion below), U.S. Patent 5,262,383 ("Fischer et al '383"), and U.S. Patent 6,603,044 ("Tohnishi et al") in view of published US 2003/0100604 ("Fischer et al '604") and US 2003/0114312 ("Fischer et al '312"). Applicants respectfully traverse.

Since (as will be discussed below) no other cited reference even remotely suggests mixtures containing both flubendiamide and spromesifen, Applicants focus for the moment on **WO 02/87334**, which discloses combinations of (a) phthalamides of the formula



in which **R¹**, **R²**, and **R³** are independently hydrogen or any of a very large number of possible substituents, including *inter alia* alkyl or variously substituted alkyl, and **R¹**

and R² can optionally together form a cycle; X_n (where n is 1 to 4) is hydrogen and/or one or more of a number of complexly defined possible substituents, including inter alia halogen, or can optionally form a cycle attached to the benzene ring; Y_m (where n is 1 to 5) is hydrogen and/or one or more of a number of possible substituents, including inter alia alkyl or haloalkyl, or can optionally form a cycle attached to the benzene ring; and Z¹ and Z² are independently oxygen or sulfur; and (b) one or more compounds having insecticidal, acaricidal, and/or nematicidal activity. E.g., '653 patent at column 1, line 51, through column 7, line 48. The reference also teaches that the insecticidal, acaricidal, and/or nematicidal compounds can be replaced with a fungicide or herbicide. See column 18, lines 53-60, and the text that follows in columns 18 to 20. Among the many phthalamides of component (a) that are specifically disclosed can be found compound 130 (see '653 patent in Table 1 at column 11), which corresponds to Applicants' compound of formula (II-1) (also known as flubendiamide). Among the multitude of mixing partners of component (b) that are specifically disclosed can be found spiromesifen (see '653 patent at column 13, line 35), which corresponds to Applicants' compound of formula (I-b-1). Tables of data in the examples (beginning at column 23 of the '653 patent) show that mixtures of various phthalamides, including compound 130 (i.e., flubendiamide), with a few selected mixing partners can exhibit enhanced insecticidal activity. However, WO 02/87334 does not exemplify mixtures of flubendiamide and spiromesifen (or any other tetronec acid insecticide) and thus also fails to demonstrate enhanced activity for the specific combination of ingredients claimed by Applicants.

As has long been recognized, even structurally similar inventions can be patentably distinct. E.g., *U.S. v. Adams*, 383 U.S. 39, 148 U.S.P.Q. 479 (1966). For example, a narrowly claimed invention is not rendered obvious merely because a reference discloses "compounds having a generic formula which would include [the claimed compounds] if proper selection from among the many possible variables were made as suitable for the claimed purpose," particularly where "the shotgun type approach of the reference . . . would not guide one skilled in the art to choose [applicants'] restricted class of compounds from among the host of possible combinations and permutations suggested by patentees." *Ex parte Strobel and Catino*, 160 U.S.P.Q. 352 (P.O. Bd. App. 1968); see also *In re Baird*, 29 U.S.P.Q.2d 1550, 1552 (Fed. Cir. 1994). This principle is particularly applicable where the reference teaches a preference for compositions other than those claimed in the new

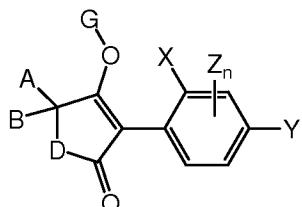
application and where comparative evidence supports a finding of non-obviousness. E.g., *Ex parte Strobel*, 160 U.S.P.Q. at 352-353; see also *In re Chupp*, 816 F.2d 643, 646, 2 U.S.P.Q.2d 1437, 1439 (Fed. Cir. 1987), and *In re Cescon*, 474 F.2d 1331, 1333, 177 U.S.P.Q. 264, 266-267 (C.C.P.A. 1973). This principle is also particularly applicable where the properties exhibited by compositions in the relevant art are unpredictable. E.g., *Brenner v. Manson*, 383 U.S. 519, 532 (1966); see also *In re Adams, Kirk and Petrow*, 316 F.2d 476, 479, 137 U.S.P.Q. 333, 335 (C.C.P.A. 1963) (Martin, J., concurring in part and dissenting in part).

Here with respect to WO 02/87334, Applicants submit that these principles are consistent with the patentability of their claimed combination of flubendiamide and spiromesifen. Although it is possible to view WO 02/87334 as including flubendiamide among the preferred members of its first component (since, as discussed above, several test mixtures described in the data tables of the reference contained flubendiamide), it is evident that the reference makes no statement of preference for spiromesifen as a mixing partner and provides no test results whatsoever for mixtures containing spiromesifen as the second component. Thus, those skilled in the art would not be led to any expectation of special properties for mixtures of flubendiamide and spiromesifen. Furthermore, Applicants now submit a Declaration under 37 C.F.R. 1.132 (copy enclosed) of Dr. Wolfgang Thielert (one of the inventors) showing not only enhanced superadditive insecticidal activity for mixtures of flubendiamide and spiromesifen but also the superiority of such mixtures compared to mixtures of flubendiamide and another mixing partner disclosed in WO 02/87334, namely the acaricide spirodiclofen (see '653 patent at column 13, line 32). With respect to the superadditive effects, tests carried out against four different insects show that inventive mixtures of flubendiamide and spiromesifen at two different weight ratios always exhibited unexpectedly enhanced activities compared to those expected for merely additive effects, even at application rates at which complete inactivity (i.e., 0% mortality) would have been expected. With respect to the superiority over the comparative mixture, three of the tests were carried out under the same conditions using non-inventive mixtures of flubendiamide and spirodiclofen but produced little or no enhancement in activity. These tests collectively are indicative not only of the superiority of Applicants' claimed compositions but also of the unpredictability of results obtainable for mixtures selected from the teachings of WO 02/87334. Coupled with the data already

provided in their specification, Dr. Thielert's Declaration fully supports Applicants' position that their claimed invention is patentably distinct from WO 02/87334.

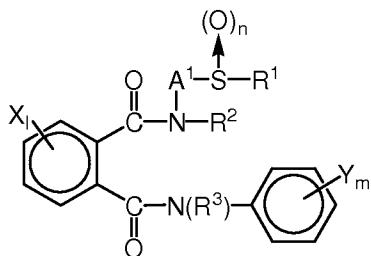
Applicants also submit that Fischer et al '383 and Tohnishi et al add nothing to WO 02/87334 that would lead those skilled in the art to their claimed invention.

Fischer et al '383 discloses dihydrofuranones and dihydrothiophenones having the formula



in which **X** is alkyl, halogen, alkoxy, or haloalkyl; **Y** is hydrogen, alkyl, halogen, alkoxy, or haloalkyl; **Z** is alkyl, halogen, or alkoxy (or together with **X** forms a fused on benzene ring); **n** is zero to 3; **G** is hydrogen or an acyl or acyl-like group; **A** and **B** independently are hydrogen or any of a number of possible substituents or together form a spirocyclic moiety; and **D** is oxygen or sulfur (with the exception of certain specifically excluded compounds). E.g., column 1, line 25, though column 2, line 65. As noted in the Office Action at page 6, among the many such compounds can be found spromesifen in Table 2 at columns 29/30. Fischer et al '383 teaches that such compounds can be used in combination with other active compounds and even suggest general classes of such compounds (see column 131, lines 28-36) but provides no specific examples of suitable compounds, much less disclose or suggest the use of flubendiamide in combination with spromesifen or that a combination of flubendiamide with spromesifen would exhibit synergism.

Tohnishi et al discloses phthalamides having the formula



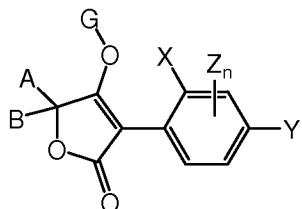
in which **A**¹ is unsubstituted C₁-C₈ alkylene or substituted C₂-C₈ alkylene (where the substituent is any of a very large number of groups); **R**¹ is hydrogen or any of a very large number of possible substituents; **R**² and **R**³ is hydrogen, cycloalkyl, or a moiety -A²-R⁴ (where A² and R⁴ are defined in a complex manner); **X** is any of a very large

number of possible substituents or can form a fused on ring; **Y** is any of a very large number of possible substituents or can form a fused on ring; **I** is 0 to 4; **m** is 0 to 5; **n** is 0 to 2; and the various substituents are defined in a very complex manner. E.g., column 1, line 39, through column 11, line 28. As noted in the Office Action at page 6, among the many such compounds can be found flubendiamide in Table 1 at columns 25/26 (compound 124). Tohnishi et al teaches that such compounds can be used in combination with other active compounds and even suggests general classes of such compounds (see column 43, lines 12-16) but provides no specific examples of suitable compounds, much less disclose or suggest the use of spiromesifen in combination with flubendiamide or that a combination of spiromesifen with flubendiamide would exhibit synergism.

Applicants therefore submit that the combined teachings of WO 02/87334, Fischer et al '383, and Tohnishi et al would not lead those skilled in the art to their claimed invention.

Applicants also submit that Fischer et al '604 and Fischer et al '312 do not bridge the gap between the combined teachings of WO 02/87334, Fischer et al '383, and Tohnishi et al and their claimed invention.

Fischer et al '604 discloses combinations of (a) dihydrofuranones of the formula



in which **X** is alkyl, halogen, alkoxy, or haloalkyl; **Y** is hydrogen, alkyl, halogen, alkoxy, or haloalkyl; **Z** is alkyl, halogen, or alkoxy; **n** is zero to 3; **A** is hydrogen or any of a number of possible substituents and **B** is hydrogen, alkyl, or alkoxyalkyl, or **A** and **B** together form a spirocyclic moiety; and **G** is hydrogen or an acyl or acyl-like group; and **(b)** any of a host of possible mixing partners. E.g., paragraphs [0004] through [0029]. Among these compounds is spromesifen. See formula (I-b-1) in paragraph [0044]. However, flubendiamide is not among the disclosed mixing partners and would not be suggested by Fischer et al '604. **Fischer et al '312** similarly discloses combinations of **(a)** dihydrofuranones of the same or essentially the same formula as disclosed Fischer et al '604 and **(b)** any of a host of mixing

partners that, as with Fischer et al '604, do not include flubendiamide. E.g., paragraphs [0003] through [0108]. Applicants submit that neither of these references even remotely suggests the use of spiromesifen in combination with flubendiamide, much less suggest any advantages for such a combination.

Applicants therefore respectfully submit that their claimed invention is not rendered obvious by the combined teachings of WO 02/87334, Fischer et al '383, and Tohnishi et al in view of Fischer et al '604 and Fischer et al '312.

In view of the preceding amendments and remarks, allowance of the claims is respectfully requested.

Respectfully submitted,

By Richard E. Henderson
Richard E. L. Henderson
Attorney for Applicants
Reg. No. 31,619

Bayer CropScience LP
2 T.W. Alexander Drive
Research Triangle Park, NC 27709
Ph.: (919) 549-2183
Fax: (919) 549-3994
Q:patents/prosecution documents/cs8715/8715 amendment 3-4-10